

## **REMARKS**

This paper is presented in response to the Office Action. By this paper, new claims 25-26 are added. Claims 1-26 are now pending in view of the aforementioned new claims.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

### **I. General Considerations**

Applicant notes that the remarks and amendments presented herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. Such remarks, or a lack of remarks, and amendments are not intended to constitute, and should not be construed as, an acquiescence, on the part of the Applicant: as to the purported teachings or prior art status of the cited references; as to the characterization of the cited references advanced by the Examiner; or as to any other assertions, allegations or characterizations made by the Examiner at any time in this case. Applicant reserves the right to challenge the purported teaching and prior art status of the cited references at any appropriate time.

In addition, the remarks herein do not constitute, nor are they intended to be, an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed herein are presented solely by way of example. Consistent with the foregoing, the discussion herein is not intended, and should not be construed, to prejudice or foreclose contemporaneous or future consideration, by the Applicant, of additional or alternative distinctions between the claims of the present application and the references cited by the Examiner, and/or the merits of additional or alternative arguments.

### **II. Rejection of Claims 1-5, 7-11, 14-16 and 18-19 under 35 U.S.C. § 102(b)**

Applicant respectfully notes that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. *Manual of Patent Examining Procedure ("MPEP") § 2131.*

The Examiner has rejected claims 1-5, 7-11, 14-16 and 18-19 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,399,885 to Thijs et al. ("*Thijs*"). Applicant disagrees with the

contentions of the Examiner however and submits that for at least the reasons set forth below, the rejection should be withdrawn.

**a. claims 1-5 and 7**

In rejecting claims 1-5 and 7, the Examiner has asserted that *Thijs* discloses, in Figure 1, "... a semiconductor mesa (12) fashioned from a protective layer (21) ..." However, this characterization by the Examiner contradicts Figure 1 of *Thijs*. Particularly, the bracket "{" used in Figure 1 of *Thijs* to designate "first mesa 10, 12" embraces portions of contact layer (6) and second cladding layer (5), but does not extend to include "insulating region 21" (characterized by the Examiner as a "protective layer").

In view of the foregoing, Applicant respectfully submits that the Examiner has not established that *Thijs* anticipates claim 1, and corresponding dependent claims 2-5 and 7, at least because the Examiner has not established that each and every element as set forth in the claims is found in *Thijs*, and because the Examiner has not established that the identical invention is shown in *Thijs* in as complete detail as is contained in the claim. Moreover, the Examiner has not established that *Thijs* teaches or suggests the arrangement of the elements required by the claim. Applicant thus respectfully submits that the rejection of claims 1-5 and 7 has been overcome and should be withdrawn.

**b. claims 8-11**

In rejecting claims 8-11, the Examiner has asserted that *Thijs* discloses "... two optical cladding layers (2 & 5) ... [and] a plurality of semiconductor mesas (12) formed on the semiconductor laser wafer and separated from the two optical cladding layers ..." *Emphasis added*. However, this characterization by the Examiner seems to contradict Figure 1 of *Thijs*. For example, in Figure 1 of *Thijs*, the bracket "{" used to designate "first mesa 10, 12" embraces portions of both contact layer (6) and second cladding layer (5). Applicant respectfully submits that insofar as *Thijs* purports to disclose a mesa 12 that is defined in part by the second cladding layer (5), it is logically inconsistent to characterize the mesa 12 as being "separated from" that cladding layer (5).

In view of the foregoing, Applicant respectfully submits that the Examiner has not established that *Thijs* anticipates claim 8, and corresponding dependent claims 9-11, at least because the Examiner has not established that each and every element as set forth in the claims is found in *Thijs*, and because the Examiner has not established that the identical invention is shown in *Thijs* in as complete detail as is contained in the claim. Moreover, the Examiner has not established that *Thijs* teaches or suggests the arrangement of the elements required by the claim. Applicant thus respectfully submits that the rejection of claims 8-11 has been overcome and should be withdrawn.

**c. claims 14-16 and 18-19**

In the rejection of claims 14-16 and 18-19, the Examiner has asserted that *Thijs* discloses "... a ridge waveguide (32) contacting the contact layer (6) and a metal contact layer (7) formed on said contact layer, said ridge waveguide having a ridge top surface disposed from a first surface of the laser die by a first height ..." *Emphasis added*. Applicant respectfully disagrees.

For example, while the Examiner has asserted that "ridge waveguide 32" contacts the "contact layer 6," it is not apparent from Figure 1 of *Thijs* (cited as support by the Examiner) that any portion of the "ridge waveguide 32" contacts the "contact layer 6." Moreover, the Examiner has failed, in any event, to identify which portion of the "ridge waveguide 32" is purported to be in contact with the "contact layer 6."

In addition, the Examiner has further asserted that *Thijs* discloses "... at least one semiconductor mesa (12) formed on the contact layer (6) ..." However, this characterization by the Examiner would seem to contradict Figure 1 of *Thijs*. For example, in Figure 1 of *Thijs*, the bracket used to designate "first mesa 10, 12" appears to embrace portions of contact layer (6) and second cladding layer (5). Applicant respectfully submits that insofar as *Thijs* purports to disclose a mesa 12 that is defined in part by the contact layer (6), it is logically inconsistent to characterize the mesa 12 as being "in contact" with that contact layer (6).

In view of the foregoing, Applicant respectfully submits that the Examiner has not established that *Thijs* anticipates claim 14, and corresponding dependent claims 15-16 and 18-19, at least because the Examiner has not established that each and every element as set forth in the claims is found in *Thijs*, and because the Examiner has not established that the identical invention is shown in *Thijs* in as complete detail as is contained in the claim. Moreover, the Examiner has not established that *Thijs* teaches or suggests the arrangement of the elements required by the claim. Applicant thus respectfully submits that the rejection of claims 14-16 and 18-19 has been overcome and should be withdrawn.

**III. Rejection of Claims 6, 12-13, 17 and 20-24 under 35 U.S.C. § 103(a)**

Applicant respectfully notes at the outset that in order to establish a *prima facie* case of obviousness, it is the burden of the Examiner to demonstrate that three criteria are met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; second, there must be a reasonable expectation of success; and third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *MPEP* § 2143.

The Examiner has rejected claims 6, 12-13, 17 and 20-24 under 35 U.S.C. § 103(a) as being unpatentable over *Thijs* in view of US 6,888,870 to Makita et al. ("*Makita*"). Applicant respectfully disagrees however, and submits that for at least the reasons set forth below, the rejection should be withdrawn.

**a. claims 6, 12-13 and 17**

By virtue of their dependence from one of independent claims 1, 8 or 14, dependent claims 6, 12-13 and 17 each require all the limitations of the respective independent claim. As discussed at II. above however, the Examiner has failed to establish the *Thijs* teaches or suggests all the limitations of claims 1, 8 and 14. Moreover, the Examiner has not established that *Makita*, either alone or in combination with *Thijs*, teaches or suggests all the limitations of those claims. Thus, even if *Makita* and *Thijs* are combined in the purportedly obvious fashion, the resulting combinations fail to include all the limitations of the rejected claims.

In view of the foregoing, Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 6, 12-13 and 17, at least because even if the cited references are combined in the purportedly obvious fashion, the resulting combinations fail to include all the limitations of the rejected claims. Applicant thus submits that the rejection of claims 6, 12-13 and 17 should be withdrawn.

**b. claims 20-24**

In rejecting claims 20-24, the Examiner has conceded that "*Thijs* ... does not disclose an etch-stop layer," but has asserted that "Figure 1 of *Makita* discloses an etch-stop layer (105) for use in an etching process," and then concludes that "It would have been obvious to ... use the protection and etch stop layers disclosed in *Makita* with the device disclosed in *Thijs* for improved device manufacturing characteristics ..."

Applicant notes at the outset that while the Examiner has characterized *Makita* as disclosing a "protection" layer, the Examiner has failed to identify where in *Makita* the disclosure of such a layer is purported to occur.

Moreover, while the Examiner has alleged that *Makita* discloses an "etch-stop layer (105)" and concluded that it would be obvious to use that "etch-stop layer (105)" in the *Thijs* device, Applicant respectfully notes that claim 20 does not simply refer to an "etch-stop layer." Rather, claim 20 requires "a semiconductor protection layer grown on said etch-stop layer ..." In contrast, the Examiner has not even asserted, much less established, that *Makita* and *Thijs*, whether considered alone or in combination, teach or suggest the aforementioned limitation in combination with the other limitations of the rejected claims.

In view of the foregoing, Applicant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claims 20-24, at least because even if the cited references are

combined in the purportedly obvious fashion, the resulting combinations fail to include all the limitations of the rejected claims. Applicant thus submits that the rejection of claims 20-24 should be withdrawn.

**IV. New Claims 25-26**

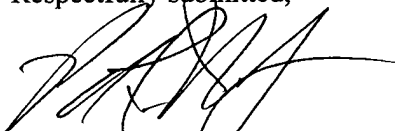
By this paper, Applicant has added new claims 25-26. Inasmuch as claims 25 and 26 depend from claim 1, believed to be in allowable condition for at least the reasons set forth herein, claims 25 and 26 are likewise believed to be in condition for allowance.

**CONCLUSION**

In view of the remarks submitted herein, Applicant respectfully submits that each of the pending claims 1-26 now pending in this application is in condition for allowance. Therefore, reconsideration of the rejections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 11<sup>TH</sup> day of January, 2006.

Respectfully submitted,



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